



State of Utah  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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M/035/015

FACSIMILE COVER SHEET

DATE: DECEMBER 22, 1995

NUMBER OF PAGES INCLUDING THIS COVER SHEET: 4

TO: ROBERT DUNNE  
KENNECOTT TAILINGS EXPANSION PROJECT

FAX NUMBER: 252-2826

FROM: D. WAYNE HEDBERG

Minerals Reclamation and Development Program

PHONE: (801) 538-5340

FAX: (801) 359-3940

SUBJECT: DRAFT TENTATIVE APPROVAL LETTER

REMARKS: PLEASE REVIEW CONDITIONS & ADVISE  
IF ACCEPTABLE. WE HAVE PROCEEDED  
TO SEND PUBLIC NOTICE TODAY TO  
NEWSPAPER AGENCY. EARLIEST ANYONE  
FROM MY STAFF BACK IN OFFICE IS NEXT  
TUESDAY. IF YOU NEED TO CHAT WITH TONY  
HE'LL BE IN THURSDAY. IF O.K. CALL TUESDAY  
AND I'LL HAVE HARD COPY SIGNED AND SENT TO YOU.

Should you encounter any problems with this copy, or do not receive all the pages, please call

Important: This message is intended for the use of the individual or entity to which it is addressed and may contain information that is privileged, confidential and exempt from disclosure under applicable law. If the reader of this message is not the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone and return this original message to us at the above address via regular postal service. Thank you.



TEMPORARY DRAFT

TEMPORARY DRAFT

December 22, 1995

Robert E. Dunne  
Project Manager  
Kennecott Utah Copper  
P.O. Box 352  
Bingham Canyon, Utah 84006

Re: DOGM Review of Supplement No. 2, Notice of Tentative Approval, Kennecott Utah Copper, Tailings Modernization Project - North Impoundment Expansion, M/035/015, Salt Lake County, Utah

Dear Mr. Dunne:

The Division has reviewed the additional information titled "DOGM Supplement No. 2" submitted in response to our September 19, 1995 review letter. We received this supplement on October 16, 1995. In addition we have reviewed the information provided by Shepherd Miller, Inc. And Schafer and Associates in response to our informal comments discussed during the October 2, 1995 acidification potential seminar.

After reviewing this information, and in consideration of the additional technical discussions and agreements reached during our December 20, 1995 meeting with you and the Division of Water Quality, the Division is now prepared to grant its tentative approval of your permit application for the Tailings Modernization Project. Our final approval will be subject to the following condition(s):

1. The final Ground Water Discharge Permit issued by the Department of Environmental Quality, Division of Water Quality (DWQ), contains a specific compliance schedule (Part I, section K). Compliance condition item #4 - *Assessment of Acidification Potential*, #6 - *Operational Monitoring Plan*, and #9 - *Closure Plan*. The information provided by Kennecott under these compliance conditions will also be subject to this Division's review and comment. Based upon our review of this future information, we may require modifications to the approved mining and reclamation plan.
2. The additional information describing the reclamation treatments provided by Kennecott on December 12, 1995 should be included in the permit application. We request that this information be provided as revised text under the appropriate section(s) of the permit application. The acreages used in the surety calculation sheet do not match the

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**TEMPORARY DRAFT**

**TEMPORARY DRAFT**

acreages shown on drawing #4710-72-072 Reclamation Plan. This drawing must be revised to accurately reflect the acreages used in the calculations.

The additional information provided by Kennecott describes several roads on the tailings expansion which Kennecott proposes to leave unreclaimed. These are listed under the heading of 11 AHAB Removal of Roads in the information provided on 12/20/95 by Kennecott. The Division considers these features to be part of the disturbed area and subject to reclamation unless a variance has been granted. Consequently, Kennecott will need to revise the variance section of the permit application to include a description of these unreclaimed features and justification for leaving them unreclaimed.

Two items regarding the surety estimate remain to be resolved: (1) Lime treatment of acidic spots on the future embankment, and (2) the application of mulch on the future embankment. The Division will require the surety estimate to include a line item for the surface application of limestone equivalent to 35 % of the new embankment surface. The proposed application rate of 50 pounds per acre is acceptable. Kennecott's surety calculation sheet proposed limestone application for 10 % of the embankment area, or back calculating from the total cost of \$220,000, at \$2,100/acre, implies 104.8 acres. If 104.8 acres is 10 % of the embankment, then 35 % would be  $(0.35)(1048) = 366.8$  acres. Therefore, this line item should be adjusted to 366.8 acres at \$2,100/acre for a new line item total of \$770,280.

The Division will require the addition of organic material to the new tailings embankment material to achieve a minimum organic content of 1 % within the top 12 inches of tailings. The amount and type of organic material may be subject to future negotiation and change. One way to provide this amount of organic material would be to apply alfalfa hay mulch at a rate of 10 tons per acre. This mulch would need to be disced/ripped into the top 12 inches. Therefore, a new line item should be added to Kennecott's reclamation surety calculations for the application of alfalfa mulch at a rate of 10 tons per acre. The mulch would be applied to @1048 acres at an estimated unit cost of \$1,000 per acre, for a new line item total of \$1,048,000. Kennecott's continuing reclamation research may ultimately demonstrate that long term erosional and vegetative stability of the Tailings Modernization Project can be achieved with a different type or amount of organic material. The reclamation surety amount would be adjusted accordingly at that time.

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Robert E. Dunne  
M/035/015  
December 22, 1995

Adjusting the reclamation surety estimate provided by Kennecott for these two items brings the total surety amount requested by the Division to \$18,066,000 in terms of the year 2000 dollars. We have attached a revised version of Kennecott's surety estimate summary outlining these changes.

Assuming Kennecott accepts these conditions, we will proceed to publish notice of our tentative approval. This will start a 30-day public comment period. If no substantive comments are received during the public comment period, we will seek the Board's approval of the amount and form of proposed reclamation surety during their January 24, 1996 hearing. In order to meet the mailing deadline for Board packages, we must have copies of the completed Reclamation Contract (FORM MR-RC) and the reclamation surety by January 8, 1996. If you have any questions in this regard please contact me, Wayne Hedberg, or Anthony Gallegos of the Minerals Staff. Thank you for your continued cooperation and assistance in completing this permitting action.

Sincerely,

Lowell P. Braxton  
Associate Director, Mining

jb  
Attachment: Surety Estimate  
cc: Mike Schwinn, ACOE  
John Whitehead, DWQ  
Minerals staff (route)  
M035015.tap

RECLAMATION SURETY ESTIMATE      DRAFT  
 Kennecott Tailings Modernization Project      M/035/015  
 aka North Expansion Project  
 Salt Lake County, Utah

last update      12/22/95  
 filename k-tails.wb2  
 page 'A'

**DESCRIPTION**

- This estimate is based on KUC's reclamation surety estimate of October 6, 1995
- Dollar amounts are taken from the appropriate headings in the KUC 10/6/95 estimate
- The 2 items which have been modified/added by DOGM are shown shaded
- The disturbed area for this project is approximately      3,334    acres???
- The amount of area to be reclaimed is approximat      4,013    acres???

<u>Task Description</u>	<u>area</u>	<u>units</u>	<u>\$/unit</u>	<u>\$</u>
Construction of reclaim dikes				1,521,844
Geotextile fabric for reclaim dike roads				91,172
Dust control on reclaim dikes				12,012
Surfacing on top of reclaim dikes				129,616
Reclamation with rangeland drill, etc.				536,668
Reclamation with 2 phase hydroseeding				483,860
Reclamation with LGP hydroseeding				5,099,668
Tree/shrub planting				661,575
Tree/shrub irrigation				597,540
Removal of buildings, pumphouses, etc.				767,250
Removal & reclamation of roads				96,886
Piping removal				1,223,000
Removal of utilities				1,265,120
Soil treatment of hot spots-DOGM 35% em	366.8 acres		2,100	770,280
Long term monitoring				84,816
Alfalfa mulch on embankment @10 ton/acr	1,048 acres		1,000	1,048,000

TOTAL DIRECT COSTS	14,389,307
ADD 10% CONTINGENCY	1,438,931
TOTAL COSTS (4TH QTR 1995-\$)	15,828,238
ESCALATION FOR 5 YRS @ 2.68%	2,237,756
TOTAL COSTS IN YR 2000-\$	18,065,994

**TOTAL COST ROUNDED IN YR 2000-\$      \$18,066,000**

average cost per reclaimed acre

\$4,502